

Remarks

Applicant thanks the Examiner for the indication of allowable subject matter in the present application and for conducting the telephone interview with the undersigned. An Interview Summary accompanies this response.

Applicant hereby adds new claims 30-36. Accordingly, claims 1-36 are pending in the present application.

Claim 27 stands rejected under 35 USC 112, first paragraph. Claim 18 stands rejected under 35 USC 102 for anticipation by U.S. Patent No 6,457,833 to Ishikawa et al. Claims 19-29 stand rejected under 35 USC 103(a) for obviousness over Ishikawa in view of U.S. Patent No. 5,903,383 to Bernstein et al.

Applicant respectfully traverses the rejections and urges allowance of the present application.

With respect to the written description rejection of claim 27, Applicant asserts that the exemplary embodiments of the originally-filed specification and drawings support the claimed subject matter. Regarding the rejection based on §112, first paragraph, the Examiner is respectfully reminded that MPEP §2163.02 (8th Edition) states the test for sufficiency of support in a application is whether the disclosure relied upon "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter." MPEP §2163.02 (8th Edition) *citing Ralston Purina Co. v Far-Mar-Co., Inc.*, 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985). Notably, the subject matter of the claim need not be described literally (i.e., **need not be described using the same terms** or *in haec verba*) in order for the disclosure to satisfy the description requirement. MPEP §2163.02 (8th Edition). Also, MPEP §2163 I. (8th Edition) states it is now well accepted that a satisfactory description may be in the claims or any other portion of the originally-filed specification and an applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, **figures**, diagrams, and formulas that fully set forth the claimed invention (citations omitted). Fig. 4 illustrates red, green and blue striped color patterns produced as a constant output by optics 11. The color stripe illumination pattern at focal plane 33 is fixed in ordering of colors as shown in Fig. 4. There is no change to the ordering of the pattern provided. As set forth in Fig. 5, the pattern corresponds to sub-pixels of the light valve. Page 8 of the

specification defines a plurality of full-color screen pixels 42 which each include a red sub-pixel 43, a green sub-pixel 44 and a blue sub-pixel 46 shown in Fig. 5. The colors reflected by the sub-pixels are constant and do not change. Accordingly, as defined in claims 25 and 27, the illumination pattern comprises a plurality of different colors and as shown in Figs. 1, 4 and 5, the ordering of the different colors reflected by the respective sub-pixels does not change. Applicant respectfully submits claim 27 is supported by the above-described exemplary embodiment of the originally-filed application and requests withdrawal of the rejection of claim 27.

Referring to the prior art rejection of claim 18, and as discussed during the telephone interview, Ishikawa fails to disclose or suggest positively-recited limitations of claim 18 and claim 18 is believed to be allowable for at least this reason.

On page 3 of the Action, the Office states that Ishikawa fails to disclose the parallel stripes corresponding to the size and configuration of a color stripe illumination pattern as claimed. However, the Office states that the size/configuration of the pattern for display is based upon the image data used to illuminate respective pixels/subpixels. Applicant appreciates the further interpretation of the Ishikawa teachings alleged to disclose limitations of claim 1 but Applicant respectfully disagrees with the rejection and the interpretation of the prior art teachings.

Figs. 4 and 5 of Ishikawa uses a rotating dichroic mirror disk system 16 as a color separator to form light beams a, b, c. As presented in Fig. 5, the mirror disk system merely generates the three light beams a, b, c from a white light source 11. The only function provided is color separation and there is absolutely no color stripe illumination pattern formed or otherwise provided. Applicant also disagrees with the statement that the size/configuration of the pattern for display is based upon image data. To the contrary, the image data merely controls the positioning of the respective mirrors to selectively reflect light from the respective light beams to form images. The size/configuration of the arrangement of mirrors of Fig. 1 of Ishikawa is independent of the image data. The image data may be applied to any size/configuration of mirrors to generate images and provides no basis or dictation of the size/configuration of the mirror arrangement of Fig. 1 as alleged in the Office

Action. For example, different implementations of the mirror arrangement of Fig. 1 having pixels of different sizes and resulting in a different size of the DMD will still generate images using the same image data.

Referring again to Applicant's disclosure, in one aspect, the color stripe illumination pattern of Fig. 4 is generated in focal plane 33 and is *subsequently* directed to the micro mirror light valve 36 of Fig. 1. The dichroic mirror system 16 of Ishikawa merely separates white light into beams of three different colors which are not parallel or provide parallel stripes as shown in Fig. 5. Ishikawa is devoid of disclosing or suggesting the *screen pixels being arranged to form parallel stripes corresponding to the size and configuration of a color stripe illumination pattern* as claimed. As discussed above, the size/configuration of the pattern for display is independent from and not based upon image data, and there is no pattern disclosed or suggested in Ishikawa for which the parallel stripes of screen pixels are sized or configured to. Limitations of claim 18 are not shown nor suggested by the prior art and claim 18 is allowable for at least this reason.

The claims which depend from independent claim 18 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, claim 21 recites that the *one and the another directions are the only directions in which light is reflected by the reflective micro-mirror light valve*. As clearly illustrated in Fig. 2 of Ishikawa, light is reflected in *at least three directions* including towards the upper right, the upper left, and perpendicular to the paper surface. Positively recited limitations of claim 21 are not shown nor suggested by the prior art and claim 21 is allowable for at least this reason.

Claim 22 recites that individual ones of the sub-pixels are configured to *reflect only one color of the pattern during all operations of the reflective micro-mirror light valve*. As is made clear from the teachings in Fig. 2 and col. 4, lines 5-17 of Ishikawa, light beams a, b, c directed towards respective areas A, B, C rotate in staggered sequential orders of green-blue-red. Accordingly, pixels of the respective areas A, B, C reflect different colors of light and fail to disclose or suggest the defined sub-pixels configured to reflect only one color of the pattern during all operations of the light valve as claimed. Applicant further notes that the

fact that each pixel of Ishikawa reflects one color at a time as noted on page 5 of the Action fails to teach or suggest limitations of claim 22 reciting reflection of one color during all operations of the light valve. Positively recited limitations of claim 22 are not shown nor suggested by the prior art and claim 22 is allowable for at least this additional reason.

Claim 25 recites that the color stripe illumination pattern comprises a plurality of *different colors which are repetitively alternated in a common direction* at a moment in time. Fig. 2 of Ishikawa discloses three areas A, B, C which individually have one of three different colors red, green or blue at any given moment in time. It is clear from Fig. 2 that the *colors are not repeated or repetitively alternated in a common direction at a moment in time* as claimed. More specifically, if area A is green, no other areas are green at the same moment in time and accordingly the colors are not repetitively alternated in a common direction at a moment in time as claimed. Claim 25 recites limitations not shown nor suggested by the prior art and claim 25 is allowable for at least this reason.

Referring to claim 27, it is clear from the teachings of Fig. 2 and col. 4 of Ishikawa that individual areas A, B, C *rotate colors in staggered sequential orders of green-blue-red* which fails to disclose or suggest that the ordering of the colors *does not change* during all operations of the light valve. Claim 27 recites limitations not shown nor suggested by the prior art and claim 27 is allowable for at least this reason.

Referring to claims 28-29, it is stated on pages 6-7 of the Office Action that Ishikawa shows the DMD generating a pattern via lens 32 which meets the downstream limitation. As is clear from Fig. 4 of Ishikawa, light is first reflected from the DMD and *thereafter* encounters the lens 32. Claims 28-29 recite the *illumination stripe focal plane upstream of the light valve* as is shown in Fig. 1 of the originally filed application. For further illustration, an object moving in a direction by a point is considered to be upstream before it encounters the point and is considered to be downstream after it passes the point. According to claims 28-29, light would first encounter the upstream illuminating stripe focal plane prior to encountering the light valve. Accordingly, any teachings of lens 32 downstream of the DMD fails to disclose or suggest the claimed illumination stripe focal plane upstream of the light valve of claims 28-29 and claims 28-29 are allowable for at

least this reason.

As set forth on pages 6-7 of the Action, it is stated that it would be obvious to have full color pixels of the DMD equal substantially in size to a display/illumination pattern. Initially, Ishikawa is devoid of any pattern upstream of the DMD as discussed above. In addition, Ishikawa discloses rotating mirrors which create three beams of light reflected in different directions upstream of the DMD which may not be fairly considered to disclose or suggest the claimed pattern. The fact that the image *from the DMD* may be optionally enlarged or not by a lens downstream of the DMD and after reflection by the DMD is irrelevant regarding the size of the parallel stripes having a size equal to a size of a pattern lying within a focal plane *upstream* of the light valve. Even if the reference teachings are modified or combined, there is no teaching or suggestion in the art of the limitations recited in claims 28 and 29 and such claims are allowable for at least this reason.

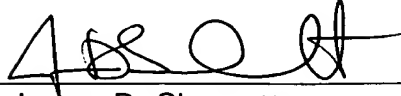
Further with reference to page 7 of the Action, Applicant submits the personal knowledge of the Examiner is not sufficient to support the 103 rejection of claims 28-29. The art is devoid of disclosing or suggesting limitations of Applicant's claims 28-29 at least some of which have been identified above. The only source of the rejections may result from the personal knowledge of the Examiner. If claims 28-29 are not allowed, Applicant hereby requests identification of prior art which allegedly discloses claimed limitations not found in the references of record or the submission of an affidavit in support of any rejection of the claims in **a non-final Action**. "[A]ssertions of technical facts in areas of esoteric technology must always be supported by citation of some reference work" and "allegations concerning specific 'knowledge' of the prior art, which might be peculiar to a particular art should also be supported." *In re Ahlert*, 424 F.2d 1088, 165 USPQ 418, 420-421 (CCPA 1970).

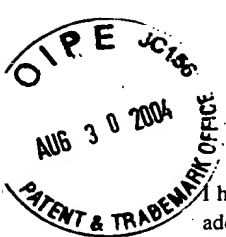
Applicant hereby adds claims 30-36 which are supported at least by Figs. 1, 4, and 5 and the respective specification teachings of the originally-filed application.

Applicant respectfully requests allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,
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**PATENT APPLICATION
DOCKET NO. 10001006-1**

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

INVENTOR(S): Laurence M. Hubby, Jr.

SERIAL NO.: 09/859,648

GROUP ART UNIT: 2614

FILED: May 16, 2001

EXAMINER: B. Yenke

SUBJECT: Optical System for Full Color, Video Projector Using Single Light Valve with Plural Sub-Pixel Reflectors

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INTERVIEW SUMMARY A

SIR:

Applicant wishes to thank the Examiner for the courtesies extended to the undersigned during the telephone interview. The Examiner and the undersigned discussed operational aspects of one implementation of Applicant's disclosure wherein the lenticular array 24 forms red, green and blue stripes of Fig. 4 which appear in an illumination stripe focal plane 33 of Fig. 1. The pattern is directed to micromirror light valve 36 for generation of images.

The Examiner and the undersigned also discussed patentable aspects of the present application with respect to the applied prior art. As further discussed in the accompanying response, the undersigned identified limitations of claim 18 which are not shown nor suggested by the prior art. Applicant also presented arguments

as to why limitations of claims 21, 22, 25, and 27-29 are not shown nor suggested by the prior art. These arguments are discussed in the accompanying response. Although no agreement was reached regarding the patentability of claims 18-29, the arguments were favorably received by the Examiner.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,
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